

NEPOMNYASHCHIY, A.I.; MUROMTSEV, V.I.; BAGDASAR'YAN, Kh.S.

Formation of ion-radicals under the effect of gamma rays on the
system tetrahydrofuran - styrene at -196° . Dokl. AN SSSR 149
~~no.~~ 4:901-904 Ap '63. (MIRA 16:3)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. Predstavleno
akademikom S.S.Medvedevym.
(Furan) (Styrene) (Gamma rays) (Radicals (Chemistry))

BAGDASAR'YAN, Kh.S.; MUROMTSEV, V.I.; SIMITSYNA, Z.A.

Two-quantum photochemical reaction. Photolysis of a frozen
solution of diphenylamine in ethyl alcohol. Dokl. AN SSSR
152 no.2:349-351. S. '63. (MIRA 16:11)

1. Fiziko-khimicheskiy institut im. L.Ya Karpova. Predstavleno
Akademikom V.A. Karginym.

BAGDASAR'YAN, Kh.S.; SINITSYNA, Z.A.; MUROMTSEV, V.I.

Two-quantum photochemistry. Proof of the second-triplet state
molecules participating in the reaction. Dokl. AN SSSR 153
no.2:374-376 N '63. (MIRA 16:12)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. Predstavleno
akademikom S.S.Medvedevym.

ACCESSION NR: AP4011446

S/0076/64/038/001/0141/0145

AUTHORS: Trosman, E. A. (Moscow); Bagdasar'yan, Kh. S. (Moscow)

TITLE: Quantitative study of phenyl radical reactions with aromatic compounds

SOURCE: Zhurnal fiz.khim, v. 38, no. 1, 1964, 141-145

TOPIC TAGS: phenyl reactivity, aromatic compound reactivity, isotope dilution, gas-liquid chromatography

ABSTRACT: This is a continuation of Bagdasar'yan's laborator's work on phenyl reactivity. The present study covers benzoyl peroxide and its decomposition at 100C in a mixture of carbon tetrachloride and the compound being investigated. This is a method of competitive reaction with aromatic compounds, using benzoyl peroxide tagged with deuterium. Benzene and chlorobenzene yields were determined by the method of isotope dilution and gas-liquid chromatography. By studying hydrogen atom addition to the ring and splitting it off, the relative reactivity of hydrogen atoms in the phenyl ring and in the side chains were found. The influence of different substituents

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ACCESSION NR: AP4011446

on the addition to the phenyl ring was investigated. The data obtained are discussed in connection with the structure of the reacting molecules. The high reactivity of the α -hydrogen in benzaldehyde is discussed. Orig. art. has: 3 Formulas, 2 Tables

ASSOCIATION: Fiziko-khimicheskiy institut imeni L. Ya. Karpova
(Physico-Chemical Institute)

SUBMITTED: 15Apr63

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: CH

NR REF SOV: 007

OTHER: 004

Card 2/2

BAGDASAR'YAN, Kh.S.; REVZIN, A.F.

Determination of absolute rate constants for radical reactions. Part 1: Addition of trichlorobromomethane to cyclohexene, and 1-heptene. *Kin. i kat.* 4 no.6:844-852 N-D '63. (MIRA 17:1)

1. Fiziko-khimicheskiy institut imeni I.Ya. Karpova.

REVZIN, A.F.; BAGDASAR'YAN, Kh.S.

Determination of the absolute rate constants of radical reactions.
Part 2. Zhur. fiz. khim. 38 no.1:215-217 Ja'64. (MIRA 17:2)

1. Fiziko-khimicheskiy institut imeni L.Ya. Karpova.

ACCESSION NR: AP4035153

S/0195/64/005/002/0358/0359

AUTHORS: Krongauz, V. A.; Bagdasar'yan, Kh. S.

TITLE: Observations on a paper by Yu. A. Kolbanovskiy, A. M. Brodskiy and L. S. Polak on the mechanism of inhibiting radiolysis

SOURCE: Kinetika i kataliz, v. 5, no. 2, 1964, 358-359

TOPIC TAGS: radiolysis, inhibition, inhibition mechanism, energy transfer, inhibitor concentration, benzene benzoyl peroxide phenanthrene, benzene benzoyl peroxide anthracene, energy transfer mechanism

ABSTRACT: In the works cited (Tr. 2 Vses. soveshch. po radiatsionnoy khimii, Izd-vo AN SSSR, M., 1962, str. 65, "All-Union Conference on Radiation Chemistry, and Dokl. AN SSSR, 139, 1081, 1961) Kolbanovskiy et al. discussed the inhibiting effects in the radiolysis of solutions created by small amounts of inhibitors, indicating this action was tied up with the transfer of energy from the solvent to the inhibitor. Examination of concentration curves (c) of additives plotted against the inverse of radiation output of the decaying donor ($1/G$) led to their conclusion that $1/G = c^{2/3}$. Their conclusions regarding the mechanism of energy transfer were made on this basis. Based on Card, 1/2

ACCESSION NR: AP4035153

original work and other literature, the present authors disagreed with Kolbanovskiy et al., indicating that $1/G = C$ is just as possible as $1/G = C^{2/3}$, and that in the benzene-benzoyl peroxide-phenanthrene (anthracene) system the solvent benzene is the primary donor and the energy transfer from benzoyl peroxide to the inhibitor acceptor is merely a secondary process (Kolbanovskiy felt energy was transferred from benzoyl peroxide donor to the phenanthrene or anthracene acceptor). The present work indicated the mechanism of energy transfer as related to concentration of additives requires a more consistent approach than the one taken by Kolbanovskiy et al. At low concentrations there is no easily determined relationship between energy transfer and inhibitor concentration, but at higher concentrations the relationship $1/G \propto C$ seems to hold. Orig. art. has: 4 figures.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physical
-Chemical Institute)

SUBMITTED: 07Mar63

SUB CODE: OC,NP

NR REF SOV: 008

ENCL: 00

OTHER: 002

Card 2/2

REVZIN, A.F.; BAGDASAR'YAN, Kh.S.

Determination of the absolute reaction rates of radical
reactions. Part 3. Zhur. fiz. khim. 38 no.4:1020-1023 Ap '64.
(MIRA 17:6)

1. Fiziko-khimicheskiy institut imeni I.Ya. Karpova.

L 19745-65 ENT(m)/EFF(c)/EMP(j) Pe-h/Pr-h ASD(p)-3/RAEM(i) RM/MLK

ACCESSION NR: AT4049366

S/0000/64/000/000/0265/0271

AUTHOR: Bagdasar'yan, Kh. S., Sinitsy*na, Z. A., Milyutinskaya, R. I.

TITLE: Kinetic study on the effect of antioxidants during the oxidation of rubber. I.
Kinetics of the uninhibited oxidation of rubber

SOURCE: Khimicheskiye svoystva i modifikatsiya polimerov (Chemical properties and the modification of polymers); sbornik statey. Moscow, Izd-vo Nauka, 1964, 265-271

TOPIC TAGS: synthetic rubber, rubber oxidation kinetics, antioxidant, benzoyl peroxide, azodiisobutyronitrile

ABSTRACT: The kinetics of oxidation of 0.1 g specimens of sodium-butadiene rubber were studied at 60-100C under constant oxygen pressure in a thermostat equipped with a differential manometer, and also with oxygen circulation and freezing out of the decomposition products in a cold trap. The specimens were purified by reprecipitation and deposited from benzene solution as approximately 0.1-mm thick films. The tests showed that oxidation rates increased during an initial period, and that this lag period does not depend on the presence of inhibitors or their consumption. A second and nearly stationary period was followed by the rapid decrease of oxidation rates in the third and final period. The initial period was not affected by removal of oxidation products, nor by the thickness

Cord 1/2

L 19745-65

ACCESSION NR: AT4049866

of the film, and addition of up to 3.58% benzoylperoxide or 4.68% azoisobutyronitrile⁴ did not change the rate of the stationary process, although the initial period decreased. The concentration of peroxides was determined in some runs by iodometric titration, revealing a stationary peroxide concentration of 23 and 14.5 mmol/mol monomer at 80 and 100°C respectively, within an error of 2 and 3 mmols. The kinetic model was based on a radical chain reaction with branching and R. and RO₂. as species for rate determination. The stationary rate was found to be proportional to oxygen pressure and to increase with temperature; the effective activation energy was approximately 15 kcal/mol, the branching factor was at least 0.35, and the rate constant for decomposition of rubber peroxide was $(2. \dots 0.5) \cdot 10^{-2} \text{ min}^{-1}$ with an activation energy of approximately 21 kcal/mole. "The decomposition of benzoyl peroxide in rubber was studied by E. A. Trosman in the authors' laboratory. The authors thank A. S. Kuz'minskiy and L. G. Angert for helping with the work and evaluating the results." Orig. art. has: 1 table, 4 figures and 18 formulas.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute)

SUBMITTED: 18Jul63

ENCL: 00

SUB CODE: MT, OC

NO REF SOV: 003

OTHER: 002

Card 2/2

L 19746-65 LMT(m)/EFF(c)/ENP(j) Pc-L/Pr-L RM/MLK

ACCESSION #: AT4049867

S/C000/64/000/000/0272/0274

AUTHOR: Sinit'syna, Z. A., Bagdasar'yan, Kh. S.

15
E + 1
TITLE: Kinetic study on the effect of inhibitors of rubber oxidation. II. Comparison of inhibitors and their mixtures

SOURCE: Khimicheskiye svoystva i modifikatsiya polimerov (Chemical properties and the modification of polymers); sbornik statey. Moscow, Izd-vo Nauka, 1964, 272-274

TOPIC TAGS: synthetic rubber, rubber oxidation kinetics, antioxidant

ABSTRACT: A study of the induction periods induced by various inhibitors during oxidation of sodium butadiene rubber at 100C in an apparatus described in the previous paper in the collection (AT4049866) showed that the length of the induction period depended directly on the amount of inhibitor added, and that phenothiazine (I), diphenyl-p-terphenyldiamine (II), 2,2'-dimethyl-4,4'-dihydroxy-5,5'-di-tert.-butyldiphenylsulfide (III), and phenyl-naphthylamine (IV) were the most effective of 10 compounds tested. I and II produced induction periods of 3600 and 362 hrs. in concentrations of 0.001 and 0.0001 wt. % 0.01 wt. % II yielded 1380 hrs., 0.02 wt. % III yielded 1020 hrs., and 0.02 wt. % IV yielded 540 hrs., lesser effects being obtained with "Ca0-6" (2,2"-dihydroxy-3,3'-di-tert.-butyl-5,5'-dimethyl-diphenylsulfide), "Altax", Kaptax (2-mercaptobenz-

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L 19746-65

ACCESSION NR: AT4049867

thiazole), sulfur with 3.15% azoisobutyrodinitrile, and no detectable effect being produced by anthracene or 3-diethylaminomethylbenzthiazolethione-2. The nearly complete consumption of phenyl- β -naphthylamine during the induction period was proven by determining its concentration from the dye formed with p-nitroaniline. A synergistic effect was found with IV and "Ca0-6", most other combinations had additive effects, and a decrease in inhibitor activity was found with three combinations of IV. "The authors thank G. Ya. Richmond and Ye. N. Gur'yanova for providing some of the inhibitors" Orig. art. has: 2 tables.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute)

SUBMITTED: 18Jul63

ENCL: 00

SUB CODE: OC, MT

NO REF SOV: 002

OTHER: 000

Card 2/2

TROSMAN, E.A.; BAGDASAR'YAN, Kh.S.

Determination of the relative rate constants for the reaction
of a phenyl radical with substituted toluenes. Zhur.fiz.khim.
38 no.11:2698-2700 N '64. (MIRA 18:2)

1. Fiziko-khimicheskiy institut imeni Karpova.

TAL'ROZE, V.L., doktor khim. nauk, otv. red.; BAGDASAR'YAN, Kh.S.,
doktor khim. nauk, red.; FRANKOVICH, Ye.L., kand. fiz.-
matem. nauk, red.; SKURAT, V.Ye., kand. khim. nauk, red.

[Elementary processes of the chemistry of high energies;
transactions] Elementarnye protsessy khimii vysokikh
energii; trudy. Moskva, nauka, 1965. 317 p.

(MIRA 18:5)

1. Simpozium po elementarnym protsessam khimii vysokikh
energii, Moscow, 1963.

10072-00 D.F.I./LWT(m) T IJP(c) WW/GS/AT/RM

ACC NR: AT5023435

SOURCE CODE: UR/0000/65/000/000/0105/0109

AUTHOR: Tumitskiy, N. N.; Bagdasar'yan, Kh. S.

ORG: none

TITLE: Processes of energy transfer in condensed system

SOURCE: Simposium po elementarnym protsessam khimii vysokikh energiy. Moscow, 1963. Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma. Moscow, 1965, 105-109

TOPIC TAGS: fluorescence, excited electron state, excited state, radiation effect

ABSTRACT: A mathematical treatment of the resonance mechanism of electronic excitation energy transfer is given. This mechanism operates during extinguishing of fluorescence of excited molecules B^* by the acceptor molecules A , during sensitized fluorescence of A molecules, during inhibition of chemical decomposition of B^* by A , and during sensitized photolysis or radiolysis of A molecules. For strong resonance type excitation energy transfer, the radius of the molecular interaction R depends only upon α and D where α is the energy transfer constant depending upon molecule orientation and D is diffusion constant. R is independent of molecular dimension. In general the magnitude of α is within 10^{-33} - 10^{-31} cm⁶/sec range and the magnitude of D is about 10^{-5} cm²/sec; consequently, the magnitude of R is of the order

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U 10542-50

ACC NR: AT5023435

of 10^{-7} sec. The values of the effective molecular interaction radius R can be applied to the steady state process. If excitation energy transfer from B^* to A results in chemical transformation of A and concentration of A is sufficiently small, then the steady-state concentration of A molecules is expressed by

$$\frac{dv}{dt} = -Nv.$$

Orig. art. has: 10 formulas.

SUB CODE: 20 SUBM DATE: 23Feb65/ ORIG REF: 004/ OTH REF: 000

Card ^{jw} 2/2

BAGDASAR'YAN, Kh.S.; KULER, A.L.

Quantitative test of theory of resonance energy transfer,
allowance made for Brownian motion. Opt. i spektr. 18
no.6:990-998 Je '65. (MIRA 18:12)

L 36965-66 EWP(e)/FVT(m)/EWP(j)/T RM/WH/DS

ACC NR: A3027805

SOURCE CODE: UR/0063/66/011/002/0216/0223

AUTHOR: Bagdasar'yan, Kh. S. (Professor)

ORG: none

TITLE: Dual quantum photochemical processes of the formation of radicals and cation radicals

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 11, no. 2, 1966, 216-223

TOPIC TAGS: ion radical, photochemistry, quantum chemistry, photoionization, reaction mechanism

ABSTRACT: A review of the development of two-quanta photochemical processes covers two-quanta photochemistry, kinetics of two-quanta reactions, various types of two-quanta reactions including two-quanta sensitization, two-quanta reactions of photoinitiation, two-quanta reactions of photodissociation, and the energy and mechanism of two-quanta reactions.

It should be considered that two-quanta reactions are rare exceptions. In all cases where the lifetime in the triplet state is large, two-quanta reactions of the type examined should be more the rule than the exception. Frozen systems containing aromatic compounds in turn satisfy the condition indicated. However two-quanta reactions can occur at room temperature, for example, in boric acid glasses or under any other conditions for long-term existence of the triplet state. An increase in light intensity increases the quantum yield of two-quanta reactions and thereby increases the value of the two-quanta reactions in comparison with concurring single-quantum processes.

Orig. art. has: 2 figures and 5 tables. [JPRS: 36,45]

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 026 / OTH REF: 010

Card 1/1 UDC: 66.085

CLASSIFICATION: CONFIDENTIAL/SECRET RM

ACC NR: AP7003502

SOURCE CODE: UR/0076/66/040/006/1339/1346

AUTHOR: Kish, V.; Bagdasar'yan, Kh. S.

ORG: Physico-Chemical Institute im. L. Ya. Karpov, Moscow (Fiziko-khimicheskii institut)

"Radiolysis of Isopropanol and Solutions of Benzophenone and Naphthalene in Isopropanol in the Liquid State at 30°C and in the Vitreous State - 196°C"

Moscow, Zhurnal Vsesoyuznoy Khimii, Vol 40, No 6, Jun 66, pp 1339-1346

ABSTRACT: Radiolysis of isopropanol and solutions of benzophenone and naphthalene in it was investigated. Samples were irradiated either in the liquid or frozen, vitreous state. In the latter case the intermediate radiolysis products were investigated spectroscopically and by the EPR method. On radiolysis of vitreous isopropanol at 77°K (-196°C), solvated electrons and hydroxyisopropyl radicals formed. In the presence of benzophenone, the ketyl radical Ph_2COH and the anion radical of benzophenone (the anion radical of Ph_2COH) formed in addition to this, while in the presence of naphthalene the anion radical of the latter formed. On irradiation with light at $\lambda > 340$ millimicrons, the solvated electrons disappeared rapidly, while the anion radicals of benzophenone were stable.

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UDC: 541.15

0926 0035

L 10781-67
ACC NR: AP7003502

Desolvation of the electrons with light did not increase the concentration of Me_2COH radicals or alter the yields of hydrogen, methane, or acetone formed by the radiolysis of iso-PrOH. In the radiolysis of liquid iso-PrOH the yield of acetone in relation to the concentration of added benzophenone passed through a maximum. The increase in the yield of acetone was due to superposition of the reaction $\text{MeCOH} + \text{Ph}_2\text{C=O} \rightarrow \text{Me}_2\text{C=O} + \text{Ph}_2\text{COH}$ on the reaction $2 \text{MeCOH} \rightarrow \text{Me}_2\text{C=O} + \text{Me}_2\text{CHOH}$. The presence of naphthalene during radiolysis of iso-PrOH in the liquid state reduced the yields of all radiolysis products of iso-PrOH. The authors thank V. A. Sharpatiy for assistance in obtaining and deciphering the EPR spectra. Orig. art. has: 7 figures and 1 table.

[JPRS: 38,962]

TOPIC TAGS: radiation chemistry, EPR spectrum, naphthalene

SUB CODE: 07 / SUBM DATE: 15Jul64 / ORIG REF: 003 / OTH REF: 013

Card 2/2

L 8497-66 EWT(1)/EWT(m)/EWP(j)/T/EWA(m)-2/EWA(c) IJP(c)/RPL DS/JW/RM
ACC NR: AP5026471 SOURCE CODE: UR/0195/65/006/005/0777/0781
AUTHOR: Bagdasar'yan, Kh. S.; Kondrat'yev, V.A.
ORG: Physicochemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut)

TITLE: Two-quantum photoionization of N,N-dimethyl-p-phenylenediamine in an alcohol matrix at 77K

SOURCE: Kinetika i kataliz, v. 6, no. 5, 1965, 777-781

TOPIC TAGS: photoionization, amine, photochemistry, alcohol

ABSTRACT: It is known that aromatic amine molecules act as photosensitizers of the photochemical dehydrogenation of alcohols, and are also capable of photoionization in solid alcohol solutions to form the corresponding cation radicals. In order to determine the relative importance of these two photochemical reactions, the authors studied the kinetics of accumulation of cation radicals during photolysis of solutions of N,N-dimethyl-p-phenylenediamine in a 3:9 isopropanol-isopentane mixture at 77K. The initial rate of accumulation of the cation radicals was found to be proportional to the square of the light intensity. A study of the intermittent illumination effect showed that the characteristic lifetime of an intermediate particle in this reaction coincides with the lifetime of the Cord 1/2

UDC 541.141.7:547.553.1

L 8497-66

ACC NR: AP5026471

amine molecule in the triplet state. This reaction is thus a new example of a "true" two-quantum photochemical reaction resulting from the absorption of a light quantum by the molecule in the triplet state. It is concluded that depending upon the nature of the amine, there takes place either a two-quantum sensitization of the dehydrogenation of the alcohol, or a two-quantum photoionization of the amine. Orig. art. has: 4 figures, 1 table, and 3 formulas.

SUB CODE: 07 / SUB DATE: 20Jul64 / ORIG REF: 003 / OTH REF: 005

BVK
Card 2/2

L 13103-63

EWI(1)/BDS

AFTTC/ASD/SSD

ACCESSION NR: AP3003417

S/0051/63/015/061/0100/0106

AUTHOR: Tunitskiy, N.N.; Bagdasar'yan, Kh.S.

53

TITLE: Concerning resonance excitation energy transfer between molecules taking diffusion into account

SOURCE: Optika i spektroskopiya, v.15, no.1, 1963, 100-106

TOPIC TAGS: luminescence, energy transfer, diffusion, deactivation

ABSTRACT: The authors consider the time variation of the concentration of excited molecules in a luminescent solution under the influence of spontaneous deactivation and resonance energy transfer, the probability of which equals α/r^m , where r is the distance from the excited molecule to the quenching center and α is a constant. The problem reduces to solution of a diffusion equation with a sink. From the solution one can find the ratio of the steady-state rate of change of the concentration of excited molecules to the initial rate for $m = 4$ and $m = 6$. This ratio depends on the dimensionless parameter α/DR_0^{m-2} , where D is the diffusion coefficient and R_0 is the sum of the radii of the excited molecule and the quenching center. From comparison with the equations of coagulation theory there can be found the radius of the equivalent absorbing sphere. The authors also consider

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ACCESSION NR: AP3003417

the problem of the concentration of excited molecules in the presence of a constant source of such molecules (steady excitation) and elucidate the roles of two excitation energy loss mechanisms for different values of the parameter in the two extreme cases when $D \rightarrow 0$ and when $D \rightarrow \infty$. There is a significant difference between the end results for the two cases for different values of α in the reasonable range from 10^{-30} to 10^{-33} cm⁶/sec. Orig.art.has: 36 formulas, 1 table and 1 figure.

ASSOCIATION: none

SUBMITTED: 16Nov62

DATE ACQ: 30Jul63

ENCL: 00

SUB CODE: PH

NO REF SOV: 007

OTHER: 001

Cerd 2/2

ACCESSION NR: AP4040489

S/0190/64/006/006/1098/1103

AUTHORS: Bagdasar'yan, Kh. S.; Milyutinskaya, R. I.

TITLE: Kinetic investigation of the action of inhibitors of rubber oxidation

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 6, 1964, 1098-1103

TOPIC TAGS: rubber oxidation inhibitor, oxidation induction period, molecule lifetime, oxidation initiator, sodium butadiene rubber

ABSTRACT: The authors studied the inhibited oxidation of sodium butadiene rubber in the temperature interval 90-100°. They found that the duration of the induction period for various inhibitors varies by a factor in excess of 100. The amount of oxygen utilized during the induction period is from 10 to 1000 times the amount of the added inhibitor. The inhibited oxidation of rubber has been analyzed for the case when the reciprocal of the rubber-peroxide decomposition constant is much less than the induction period. The induction period τ may be represented by the approximation $\tau \approx \beta x_0 (1 - \delta) V_{in}$, where β is the inhibition coefficient (ranges from 0 to 2), x_0 the initial concentration of the inhibitor, δ the regeneration coefficient of the inhibitor (ranges from 0 to 1), and V_{in} the initiation rate.

Card 1/2

MILYUTINSKAYA, R.I.; BAGDASAR'YAN, Kh.G.

New data on the sensitized formation of cation radicals in the low temperature radiolysis of films containing aromatic amines. Zhur. fiz. khim. 38 no.3:776-778 Mr '64.

(MIRA 17:7)

1. Fiziko-khimicheskiy institut imeni I.Ya. Karpova.

BAGDASAR'YAN, Kh.S.; KONDRAT'YEV, V.A.

Two-quantum photoionization of N,N-dimethyl-p-phenylenediamine
in alcohol matrix at 77°K. Kin.i kat. 6 no.5:777-781 S-C '65.
(MIRA 18:11)

1. Fiziko-khimicheskiy institut imeni Karpova.

BAGDASARYAN, L.G., inzh.

Laying wires on a 39 km. long anchored span of a 330 kv. power
transmission line. Energetik 8 no.11:24-26 'N '60. (MIRA 13:12)
(Electric lines--Overhead)

BAGDASARYAN, L.G., inzh.

Resetting wires on 330 kv. electric power transmission lines.
Energetik 9 no.8:23 Ag '61. (MIRA 14:8)
(Electric lines—Overhead)

BAGDASARYAN, L.G., inzh.

Mounting of electric lines with a great number of crossovers.
Energetik 9 no.7:32-33 J1 '61. (MIRA 14:9)
(Electric lines--Overhead) (Electric power distribution)

TIMOFEYEV, B.V.; BAGDARSARYAN, L.L.

Results of a microphytological investigation of petroleums in
Eastern Siberia. Dokl. AN SSSR. 154 no.1:102-103 Ja'64.

(MIRA 17:2)

1. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy geologorazve-
dochnyy institut. Predstavleno akademikom A.A. Trofimukom.

AUTHOR: Bagdasaryan, L.S., Kharitonov, V.M., Marikyan, G.A. SOV/22-11-3-5/5
TITLE: Multichannel Amplitude Analyser With a Logarithmic Characteristic
for the Measurement of Impulses (Mnogokanal'nyy amplitudnyy
analizator impul'sov s logarifmicheskoy kharakteristikoy)
PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR, Seriya fiziko-
matematicheskikh nauk, 1958,
Vol 11, Nr 3, pp 78-87 (USSR)
ABSTRACT: This is a short description of a device for the measurement
of impulses which is working since 1955.
There are 9 figures and 1 American reference.
ASSOCIATION: Fizicheskiy institut Akademii nauk Armyanskoy SSR (Institute
of Physics of the Academy of Sciences of the Armenian SSR)
SUBMITTED: February 4, 1958

Card 1/1 1. Pulse analyzers--Operation 2. Pulse analyzers--Equipment

AUTHOR: Bagdasaryan, L.G. SOV/22-11-4-4/11

TITLE: The Evaluation of Experimental Results of Ionization
Measurements (Obrabotka eksperimental'nykh dannykh ionizatsionnykh
izmereniy)

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR, Seriya fiziko-mate-
maticheskikh nauk, 1958,
Vol 11, Nr 4, pp 21 - 28 (USSR)

ABSTRACT: For the determination of the rest mass of an elementary part-
icle from impulse and ionization there have been used the
amplitude analyzer for impulses described by the author and
others in [Ref 1], a five-layer proportional recorder, a
magnetic mass spectrometer and two Wilson cameras. On the basis
of measurements carried out with 6000 hard particles an
ionization distribution curve was constructed, the width of
which is 32,5% in the half height. The author describes the
(well-known) methods according to which the evaluation of the
experimental results was carried out. The paper was written
under the guidance of V.M. Kharitonov and with the assistance
of G.A. Marikyan. The author thanks A.I. Alikhanyan for the
interest in his work.

Card 1/2

The Evaluation of Experimental Results of Ionization SOV/22-11-4-4/11
Measurements

There are 6 figures, and 8 references, 4 of which are Soviet,
2 English, and 2 American.

ASSOCIATION: Fizicheskii institut AN Armyanskoy SSR (Physical Institute
AS Armenian SSR)

SUBMITTED: June 23, 1958

Card 2/2

BAGDASARYAN, L. S. Cand Phys-Math Sci -- (diss) "Determination of ^{the mass} of
cosmic-ray particles by ^{their} ~~the~~ ionizing capacity in ^a multilayer proportional
counter." Yerevan, 1959. 3 pp (Physics Inst, Acad Sci Armenian SSR), 200 copies
(KL, 48-59, 112)

SOV/120-59-1-17/50

AUTHORS: Bagdasaryan, L. S., Kharitonov, V. M.

TITLE: Multi-channel Pulse Amplitude Analyzer with a Logarithmic Characteristic (Mnogokanal'nyy amplitudnyy analizator impul'sov s logarifmicheskoy kharakteristikoy)

PERIODICAL: Priory i tekhnika eksperimenta, 1959, Nr 1, pp 70-72 (USSR)

ABSTRACT: The instrument was designed for the measurement of the ionising power of charged particles from the cosmic radiation. The principle of operation of the device is as follows. The pulses from a proportional counter are amplified in a linear amplifier and applied to the input of the analyzer (see the block schematic of Fig 1). At the same time a timer circuit is triggered by a triple coincidence pulse. The timer produces a negative pulse having a duration of 30 μ s and also generates sinusoidal wave forms; the start of the sinusoidal signal coincides with the end of the pulse. These two signals from the timer are also applied to the analyzer. The sinusoidal wave form serves as a time marker and the number of the cycles corresponds to the amplitude

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Multi-Channel Pulse Amplitude Analyzer with a Logarithmic Characteristic

of the measured pulse (to a logarithmic scale). The pulses are counted by means of a 3-decade counter. The circuit of the analyzer proper is shown in Fig 2. The first four tubes of the circuit operate in such a way as to produce a rectangular pulse whose amplitude is equal to that of the measured pulse and whose width is 30 μ s. The sixth tube of the circuit, together with condenser C_{11} and resistance R_{15} produce

the lengthening of the trailing edge of the pulse. An exponential tail having a time constant of 1.1 ms is thus produced and the resulting pulse is then cut at a level of 6 V. The pulses are applied to a Schmitt trigger which produces pulses of constant amplitude; the duration of these pulses is proportional to the amplitude of the original input pulses. In the circuit of Fig 2 it was found that the length of the output pulses could be measured with an error of $\pm 0.3\mu$ s. The calibration curve of the analyzer is shown in Fig 4, where the axis of the abscissæ represents the number of channels and the axis of the ordinates corresponds to the pulse amplitude. Application of the instrument to practical problems is illustrated by the curves of Figs 5, 6 and 7, which represent the ionising power of fast cosmic particles (Note: After the

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Multi-Channel Pulse Amplitude Analyzer with a Logarithmic Characteristic

publication of the issue of this journal, 1957, Nr 4, the editor received the following letter: "...the idea of a logarithmic conversion in an amplitude analyzer which was described in my paper on an amplitude analyzer with a logarithmic conversion in this journal, 1947, Nr 4, p 43, was taken from V. M. Kharitonov, who, together with L. S. Bagdasaryan, proposed it earlier in a different instrument. Signed by B. N. Moiseyev"). The paper contains 7 figures and 4 references, of which 2 are English and 2 Soviet.

ASSOCIATION: Fizicheskiy institut AN ArmSSR (Physics Institute of the Academy of Sciences of the Armenian SSR)

SUBMITTED: January 14, 1958.

Card 3/3

BAGDASARYAN, M.G., aspirant

X-ray diagnosis of chronic otitis. Vop.rent.i onk. 6:103-111
'61. (MIRA 16:2)

(EAR --DISEASES) (DIAGNOSIS, RADIOSCOPIC)

BAGDASARYAN, M.G., aspirant

Tomography of the temporal bone. Vop.rent.i onk. 68123-129
'61. (MIRA 1682)
(TEMPORAL BONE—RADIOGRAPHY)

BAGDASARYAN, M.G., mladshiy nauchnyy sotrudnik

Tomographic data in complicated otitis. Vop. rent. i onk. 7:
83-90 '63 (MIRA 1787)

BAGDASARIYAN, Nora Aramovna; KOTLIKOV, Yakov Shmerovich; POPOV,
A.S., red.

[Socialist competition and the struggle for production
quality] Sotsialisticheskoe sorevnovanie i bor'ba za ka-
chestvo produktsii. Moskva, Profizdat, 1965. 77 p.
(Bibliotekhka profsoiuznogo aktivista no.14(110))
(MIRA 18:8)

MELKONYAN, L.G.; BAGDASARYAN, R.V.; GEVORKYAN, A.V.

Problem of evaluation of δ viscosity and the thermodynamic
elasticity of macromolecules of polychloroprene rubber. Dokl.
AN Arm. SSR 41 no.1:34-40 '65. (MIRA 18:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy proyektnyy institut
polimernykh produktov. Submitted February 20, 1965.

MELKONYAN, I.G.; BAGDASARYAN, R.V.

Determination of the molecular weight composition of nairits by nephelometric titrations. Izv. AN Arm.SSR. Khim.nauki 18 no.4:333-340 '65. (MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy i proyektnyy institut polimernykh produktov. Submitted August 24, 1964.

AUTHOR: Tagdesartov, V. A.

TITLE: Experimental investigation of the carrying capacity of aluminum alloy D 16-T rods under compression

SOURCE: AN ArmSSR. Izvestiya. Seriya tekhnicheskikh nauk, v. 18, no. 3, 1965, 37-44

TOPIC TAGS: experimental method, stress load, deformation rate, compression strength, aluminum alloy / DK T alloy, TA 2 strain gauge, PAO 6 deflector, GMS 20 press

ABSTRACT: The compressive strength of D 16-T aluminum rods with T-, H-, and channel-shaped cross sections was investigated in a precision hydraulic press of the "Reyli" firm. The work was done under the scientific leadership of Professor V. I. Iosadzhyan. First, the tests were performed under axial loading at steps of 1000 kg up to the yield point, followed by steps of 10-20 kg intervals in the plastic region. The specimens had dimensions of 7.5 x 1.5 cm. To a certain extent, the stress-strain diagrams for the different cross sections of the rods are similar. The compressive strength of the rods is 2.7-3.0 kg/cm².
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ACCESSION NR: AP5018663

3

yield stress at 0.2% deformation under compression, 42.5 kg/mm^2 and under tension, 45.1 kg/mm^2 . The second set of tests was carried out under eccentric compressive loads with the areas having dimensions of $10 \times 10 \text{ mm}$. The eccentricities were 0.1, 0.2, and 0.3. Information was obtained on the critical load, deformation of the internal and external fibers at the midsection and at quarter length, and the deflection of the midsection and the quarter length. The results show that for the same specimen the deformation of the midsection is larger than at the quarter length. Furthermore, the fibers under compression (both at the midsection and the quarter length) had approached plastic deformation. The experimental data were compared to calculations according to SN III-60 and to the method of limiting stress. The data seem to agree better with the calculations using the limiting stress method according to SN III-60. The critical load, deformation and deflection.

ASSOCIATION: Armianskoy NII stroitel'nykh materialov i sooruzheniy (Armenian NII of Construction Materials and Structures)

RECEIVED: 05Jan65

ENCL: 01

SUB CODE: NM

NI REF SOV: 007

OTHER: 003

Card 2/2

~~BADASAR'YAN, SUREN M.~~

Physicians at the front (essays) Moskva, Narkomzdrav SSSR, Goe. izd-vo meditsinskoi literatury, "Medgiz" 1941. 67 p. (43-21626)

D807.R9B3

BAGDASAR'YAN, S. M.

"Soviet Public Health up to the 32nd Anniversary of the Great
October Socialist Revolution," Sov. Med., No. 11, 1949.

BAGDASAR'YAN, S. M.

"One Hundred and Fifty Years of the Military Medical Academy,"
Terap. Arkhiv., 21, No. 3, 1949.

БН ГИДРОМЕТ (1951, 1952).

BAGDASARIAN S. M.

Uchenyi Stalinskoi epokhi. K 75-letiu so dnia rozhdeniia N. N. Burdenko (1876-1951). [Scientist of the Stalin Era; 75th birth anniversary of N. N. Burdenko (1876-1951)] Sovet. med. No. 6 June 51 p. 29-34.

1. Moscow.

CLML Vol. 20, No. 10 Oct 1951

RAGDASAR'YAN, S.M., polkovnik meditsinskoy sluzhby

N.N. Burdenko, an outstanding Soviet surgeon; on his 75th birthday.
Voen.-med. zhur. no. 6:8-15 Je '51. (MLR 9:9)

(BUDENKO, NIKOLAI NIKOLAI, 1876-)

BAGDASAR'YAN, S.M.

BURDENKO, M.B., redaktor; BAGDASAR'YAN, S.M., redaktor.

[Collected works] Sobranie sochinenii. Moskva, Izd-vo Akademii meditsinskikh nauk SSSR. Vol. 2. 1951. 291 p. Vol. 7 [Essays, scientific and popular articles] Publitsistika, nauchno-populiarnye stat'i. 1952. 1952, 264 p. (MEDA 7:5)
(Medicine, Military)

BAGDASARIAN, S. M.

Surgery - History

"Surgeon's notes." V.Ye. Salishchev. Reviewed by S.M. Bagdasar'ian. Sov. med. 16, no. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November ~~1952~~ ¹⁹⁵³. Unclassified.

BAGDASAR'YAN, S.M.

"The History of Russian Surgery"

pp. 95 Voenno-med. Zhur. no.10 October, 1955

BAGDASAR'YAN, S.M., professor

N.N.Burdenko. Zdorov'e 2 no.11:7-8 N '56.
(BURDENKO, NIKOLAI NILOVICH, 1876-1946)

(MIRA 10:1)

BAGDASAR'YAN, S.M., polkovnik meditsinskoy sluzhby, professor

Memorable pages in the history of Soviet medicine ("Selected works"
by N.A. Semashko. Reviewed by S.M. Bagdasarian) Voen-med. zhur.
no.2:91-95 F '56 (MLRA 10:5)
(PUBLIC HEALTH--HISTORY)

BAGDASAR'YAN, S.M., professor

Nikolai Nikolaevich Burdenko; on the tenth anniversary of his
death. Voen.-med.zhur. no.10:78-84 O '56. (MLRA 10:3)
(BURDENKO, NIKOLAI NIKOLAEVICH, 1876-1946)

BAGDASAR'YAN, S.M., professor

Nikolai Nilovich Burdenko. Khirurgiia 32 no.11:72-75 N '56.

(MLRA 10:3)

(BURDENKO, NIKOLAI NILOVICH, 1876-)

BAGDASARYAN, S., prof.

Pages from the history of Russian surgery. Voen.-med. zhur. no.10:
94-96 0 '57 (MIRA 12:7)
(SURGERY)

BAGDASAR'YAN, S.M., professor (Moskva)

Pages from the history of medicine in Russia. Sov.med. 21 no.1:
124-127 Ja '57. (MLRA 10:6)
(HISTORY, MEDICAL
in Russia)

BAGDASAR'YAN, S.M....

"A.G.Polotebnov" by T.S.Pavlov. Reviewed by S.M.Bagdasar'ian.
Vest.derm. 1 ven. 31 no.4:57-58 JI-Ag '57. (MIRA 10:11)
(POLOTEBNOV, ALEKSEI GERASIMOVICH, 1838-1907)
(PAVLOV, S.T.)

BAGDASAR'YAN, S.M., prof. (Moskva)

Current problems in scientific medical information. Sov.zdrav.
17 no.12:44-49 D '58. (MIRA 12:2)
(BIBLIOGRAPHY
problems in scientific med. information (Rus))

BAGDASAR'YAN, Suren Markarovich, prof.; IVANOV, B.A., red.

[Essays on the history of higher medical education; on the history of the Military Medical Academy] Ocherki istorii vysshego meditsinskogo obrazovaniia; k istorii Voenno-meditsinskoii akademii. Moskva, In-t organizatsii zdravookhraneniia i istorii med. im. N.A. Semashko, 1959. 104 p. (MIRA 13:3)
(MEDICINE, MILITARY--STUDY AND TEACHING)

BAGDASAR'YAN, S.M., prof. (Moskva)

Public health in countries of the socialist camp. Zdrav.Ros.Feder.
3 no.1:29-34 Ja '59. (MIRA 12:2)
(EUROPE, EASTERN--PUBLIC HEALTH)

BAGDASARJAN, S.M., Prof. [Bagdasar'yan, S.M.]

On the history of activities of the People's Commissariat of Public Health of the RSFSR during the civil war and military intervention.
Gesk. zdravot. 7 no.10:603-607 N '59

1. Semashkin ustav organizace zdravotnictvi a dejin lekarstvi v Moskve.
(PUBLIC HEALTH, hist.)

BAGDASAR'YAN, S.M., prof. (Moskva)

From the history of the activity of the People's Commissariat for Public Health of the R.S.F.S.R. during the civil war and foreign military intervention, 1918-1920. Zdrav. Ros. Feder. 4 no.12:25-29 D '60. (MIRA 13:12)
(RUSSIA—REVOLUTION, 1917-1921—MEDICAL AND SANITARY AFFAIRS)

BAGDASARIAN, S.M., prof.

Results of the Seventh International Congress on the History of
Medicine. Sov. med. 25 no.3:147-149 Mr '61. (MIRA 14:3)
(MEDICINE-CONGRESSES)

BAGDASAR'YAN, S.M., prof.; IVANOV, B.A.; PREOBRAZHenskAYA, M.M.;
RZHANOVICH, P.K.; SHUR, Ye.I.; SAFONOVA, M.I.; SMIRNOV, Z.,
red.

[Dissertations for the degree of Doctor and Candidate of
Medical Sciences defended from 1951 to 1955] Dissertatsii
na stepen' doktora i kandidata meditsinskikh nauk, za-
shchishchennye v 1951-1955 gg. Pod red. S.M. Bagdasar'iana.
Moskva. Vol.3. Pt.1. Bibliografiia. 1962. 303 p.
(MIRA 17:1)

1. Akademiya meditsinskikh nauk SSSR. Moscow. Otdel nauch-
noi meditsinskoy informatsii.

BARSUKOV, M.I., otv. red. (Moskva); LUSHNIKOV, A.G., red.; ZHUK,
A.P. red.; BAGDASARIYAN, S.M., red.; LISITSYN, Yu.P.,
red. (Moskva)

[Annals of the history of medicine; collection of papers]
Annaly istorii meditsiny; sbornik trudov. Moskva, Medgiz,
1963. 150 p. (MIRA 17:6)

1. Vsesoyuznoye nauchnoye istoriko-meditsinskoye obshchestvo.

BAGDASAR'YAN, S.M.

Information services in the public health system of the U.S.S.R.
NTI no.8:6-9 '64. (MIRA 17:12)

USSR/Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry.
Catalysis, B-9

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 389

Author: Bagdasaryan, S. S.

Institution: Azerbaijan State Pedagogical Institute

Title: Basic Equations for a Chemically-Reacting Gas Stream

Original

Periodical: Tr. Azerb. gos. ped. in-ta, 1955, Vol 2, 57-63

Abstract: The basic first and second law equations for a chemically reacting multicomponent gas stream are given together with the equation of continuity as a function of the concentration, molecular weights of the reagents and the velocity constant.

Card 1/1

BAGDASARYAN, S. S.

USSR/Atomic and Molecular Physics - Gases, D-7

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34462

Author: Bagdasaryan, S. S.

Institution: None

Title: On the Theory of Continuous Proces in Physical Adsorption

Original Periodical: Trans. of Azerbaydzhan State Pedagogical Institute, 1955, 2,
89-96

Abstract: A differential equation is derived to describe the continuous process at $P = \text{const}$ and $T = \text{const}$, taking into account the physical adsorption of one of the components of a gas mixture by a moving layer of solid adsorbant. A solution of this equation is given for a one-component gas which, in accordance with the Langmuir isotherm, becomes adsorbed in 3 cases: very small, moderate, and extreme adsorption.

1 of 1

- 1 -

BAGDASAYAN, S.S.

Adsorptive separation of gases in continuous-action systems. Zhur.
fiz.khim. 29 no.2:231-236 F '55. (MIRA 8:7)

1. Azerbaydzhanskiy pedagogicheskiy institut imeni V.I. Lenina, Baku.
(Adsorption) (Gases) (Chemical engineering)

BAGDASARYAN, S. S.

"Fundamental Equations of a Chemically Reacting Stream of Gases," by S. S. Bagdasaryan, Tr. Azerb. gos. ped. in-ta, 1956, Issue No 2, pp 57-63 (from Referativnyy Zhurnal -- Mekhanika, No 4, Apr 57, Abstract No 3848)

"This article presents a system of equations for the first and second laws of thermodynamics and equations of continuity of a chemically reactive multicomponent stream of gases." (U)

SUM.1391

BAGDASRYAN, S.S.
USSR/Atomic and Molecular Physics - Liquids

D-8

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 819

Author : Bagdasryan, S.S., Abbas-zade, A.K.

Inst : Azerbaydzhani Pedagogical Institute

Title : On the Structure of Liquids

Orig Pub : Me'ruzeler. AzerbSSR, elmle akad., Dolk. AN AzerbSSR,
1957, 13, No 5 481-485

Abstract : A clear model is proposed, according to which the liquid consists of two groups of molecules -- "statistical groups" of closely related particles, and "free molecules". On this bases, a qualitative explanation is given for the simplest properties of liquids.

(Predstavleno akademikom Akademii nauk Azerbaydzhanskoy SSR)
M. F. Nagiyevym.

Card 1/1

S/081/60/000/024/002/016
A005/A001

11.1000

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 24, p. 46, # 95499

AUTHOR: Bagdasarvan S.S.

TITLE: On the Classical Theory of the Structure of Pure Liquids

PERIODICAL: Dokl. AN AzerbSSR, 1960, Vol. 16, No. 3, pp. 223-226 (Azerbaijdzhan summary)

TEXT: The applicability is shown of the Gibbsian distribution to the new liquid structure pattern, which was suggested earlier (RZhKhim, 1957, No. 24, # 76531). Expressions are obtained for the statistical integrals of the states, free energy, mean energy, entropy, and heat capacity of pure liquids. VB

Author's summary

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

S/058/61/000/011/012/025
A058/A101

AUTHORS: Abas-Zade, A.K., Bagdasaryan, S.S.

TITLE: Contribution to theory of liquid structure

PERIODICAL: Referativnyy zhurnal. Fizika, no. 11, 1961, 169, abstract 11D22 ("Tr. Az. rb. gos. ped. in-ta," 1960, no. 12, 3 - 17, Azerb. summary)

TEXT: It is assumed that liquids consist of "statistical groups" and "free" molecules. Consideration is given to qualitative explanation of the following phenomena: evaporation and boiling, solidification and melting, surface tension etc.

[Abstracter's note: Complete translation]

Card 1/1

BAGDASARYAN, S.S.

Temperature dependence of the heat of vaporization and surface tension of liquids. Dokl.AN Azerb.SSR 17 no.9:773-777 '61.
(MIRA 15:3)

1. Azerbaydzhanskiy gosudarstvennyy pedagogicheskiy institut
im. V.I.Lenina. Predstavleno akademikom AN AzSSR Z.I.Khalilovym.
(Heat of vaporization) (Surface tension)

BAGDASARYAN, S.S.

Theory of new phase nuclei and of the liquid state boundaries.
Zhur. fiz. khim. 38 no.7:1816-1820 J1 '64.

(MIRA 18:3)

1. Azerbaydzhanskiy pedagogicheskiy institut imeni Lenina.

BAGDASARYAN, S.S.

Mechanism of phase transitions and boundary of the liquid state.
Zhur.fiz.khim. 39 no.7:1685-1689 J1 '65.

(MIRA 18:8)

1. Azerbaydzhanskiy pedagogicheskiy institut imeni V.I.Lenina.

BAGDASAR'YAN, S.T.

Errors in forming a gastroenteroanastomosis with an interintestinal communication. Khirurgiya 32 no.6:69-71 Je '56. (MIRA 9:10)

1. Iz khirurgicheskogo otdeleniya dorozhnoy bol'nitsy (nach. K.N. Shevchenko, glavnyy khirurg S.T.Bogdasar'yan) Moskovsko-Kiyevskoy zheleznoy dorogi, G.Kaluga.

(INTESTINES, surg.

gastroenteroanastomosis with interintestinal communication, errors in)

(STOMACH, surg.

same)

BAGDASAR'YAN, S.T.

Gastrectomy in a patient with ankylosing polyarthrosis. (Strumpel-Marie-Bakhterev disease; abstract. S.R. Bagdasar'ian. Khirurgia 34 no.12: 94-95 D '58. (MIRA 12:1)
(STOMACH--SURGERY) (ARTHRITIS, RHEUMATOID)

89484

10.9100

S/022/61/014/001/004/010

B112/B202

16.7300

AUTHORS: Bagdasaryan, Sh. Ye., Gnuni, V. Ts.

TITLE: Resonance in forced nonlinear vibration of layered anisotropic shells

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR. Seriya fiziko-matematicheskikh nauk, v. 14, no. 1, 1961, 41-49

TEXT: The authors study forced vibrations of elastic shells consisting of an odd number of layers. The layers are orthotropic and symmetrical with respect to the central layer of the shell. The elastic structure of the individual layers is widely similar to their geometrical structure. Two classes of shells are distinguished: shells with different families of curvature lines and shells with two equal families of curvature lines, i.e., axially symmetrical shells. On the basis of the hypothesis by Kirchhoff-Lyav a nonlinear differential equation of the form

$f'' + 2\lambda f' + \omega^2 f - lf^2 + df^3 = q \cos \vartheta t$ is derived as vibration equation

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Resonance in forced nonlinear...

S/022/61/014/001/004/010
B112/B202

for both cases. The coefficients ω , l , d are determined by the elastic and geometrical moduli of the shell and are explicitly given for conic shells and spherical shells. The damping coefficient λ and the disturbance q are arbitrary. In the resonance case ($\vartheta = \omega + \varepsilon$) the following relation was obtained for the amplitude factor b :

$$b^2 \left[(\varepsilon - \kappa b^2)^2 + \lambda^2 \right] = \frac{q^2}{4\omega^2} \quad \text{with } \kappa = \frac{3d}{8\omega} - \frac{5l^2}{12\omega^2}.$$
 The boundaries of the resonance frequency domain are determined by the condition $\frac{db}{d\varepsilon} = \infty$ or

by its equivalent condition $\varepsilon^2 - 4\kappa b^2 \varepsilon + 3\kappa^2 b^4 + \lambda^2 = 0$. Although the nonlinearity of the vibration does not influence the maximum value

$b_{\max} = \frac{q}{2\omega\lambda}$ of the amplitude factor, it gives rise to a series of resonance types characterized by $\vartheta = \frac{\omega}{2} + \varepsilon$, or $\vartheta = 2\omega + \varepsilon$; they are discussed at the end of this paper. There are 5 figures and 9 Soviet-bloc references.

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89484

Resonance in forced nonlinear...

S/022/61/014/001/004/010
B112/B202

ASSOCIATION: Institut matematiki i mekhaniki AN Armyanskoy SSR
(Institute of Mathematics and Mechanics AS Armyanskaya SSR)

SUBMITTED: May 20, 1960

Card 3/3

BAGDASAR'YAN, V.

On the advanced "Aleshnikovskii" State Farm. Sel'stroi. 15
no.1:8-9 Ja '60. (MIRA 15:7)

1. Direktor sovkhoza "Aleshnikovskiy" Stalingradskoy oblasti.
(Volgograd Province--Farm buildings)

BAGDASAR'YAN, V.

Built with one's own hands and of local materials. Stroitel' no.5:7
My '57. (MLRA 10:6)

1. Direktor Pervomayskogo sovkhosa
(Kasakhstan--Building)

ZORABYAN, A.; BAGDASARYAN, Ye.

New procedures in chemical processing of fermented solution of
citric acid at the Spitak Sugar Refinery. Prom.Arm. 4 no.6:
40-41 Je '61. (MIRA 14:8)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya
Upravleniya pishchevoy promyshlennosti Sovnarkhoza Armyanskoy
SSR.

(Spitak--Citric acid)

26

8130* Sodium, Rubidium, and Cesium Ozonides. (In Russian.) G. P. Nikolskii, E. A. Bagdasaryan, and I. A. Kazarnovskii. *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 77, Mar. 1, 1951, p. 69-72.

Describes synthesis of the above compounds, which is similar to the KO_3 synthesis reported some time ago. Technique of synthesis for each individual compound is indicated; composition and physicochemical properties of each are tabulated. 17 ref.

BAGDASARYAN, Ye.G.

Production of vitamin B₁₂ by soil bacteria. Mikrobiologiya
34 no.3:502-505 My-Je '65.

(MIRA 18:11)

1. Saratovskiy gosudarstvennyy universitet.

~~CA~~ BAGDASHRYAN, Z. A.

Oxozides of sodium, rubidium, and cesium. G. P. Nikol'skii, Z. A. Bagdasaryan, and I. A. Kazarnovskii (I. V. Karpov Phys.-Chem. Inst., Moscow). *Doklady Akad. Nauk S.S.S.R.* 77, 60-72 (1951). - Reaction between finely ground anhyd. NaOH (98.2%) and ozonized O_3 (8-10%) at temps. between -50 and -60° produces an intensely yellow color. Extn. with liquid NH_3 (at the same low temp.) and evapn. leave a finely cryst. dark-red powder, which analyzes about 90% Na_2O , some 2-3% NaOH , and 4-6% H_2O . The latter is due to extn. by the liquid NH_3 of some of the H_2O of $\text{NaOH} \cdot \text{H}_2\text{O}$. At room temp., Na_2O decomposes according to $\text{Na}_2\text{O} = \text{Na}_2\text{O}_2 + \frac{1}{2}\text{O}_2$; this decompn. is practically complete in 53 hrs., and the color changes from dark-red to yellow. By the same method, with RbOH (99%), at -30° , an orange finely cryst. product is obtained contg. from 40 to 67% Rb_2O , the rest RbOH (no H_2O). The high content of RbOH is due to its significant sol. in liquid NH_3 , which was detd. to be 0.9 g./100 ml. at -40° (new detn.). At room temp., the prod-

net decomposes slowly according to $\text{RbOH} = \text{RbCl} + \frac{1}{2}\text{O}_2$.
 From CsOH (98.9%), the red-brown product obtained by
 the same method contains 64-7% Cs_2O , the rest CsOH
 (no. H_2O). The decomposition $\text{CsOH} = \text{Cs}_2\text{O} + \frac{1}{2}\text{O}_2$ is slow;
 at $17-19^\circ$, it requires 28 days, as against 11 days for KOH
 (C.C.I., 43, 4166). The fact that no Li_2O can be prep'd. by
 the method which is successful with NaOH , KOH , RbOH ,
 and CsOH , is explained on the basis of the assumed mecha-
 nism of the reaction, with $\text{MOH} = 2\text{O} = \text{MO} + \text{HO} + \text{O}$,
 as the rate-detg. step. The free energy ΔF_{298}° of this reac-
 tion, for $\text{M} = \text{K}$, is est'd. to -28 kcal. (with $\Delta H^\circ = 27$
 kcal., $\Delta S^\circ = 3$ cal./degree). For the other oxides, ΔH°
 is est'd. approx. from the value of ΔH° for KO_2 and from estm.
 of the lattice energies by the lattice distances; the latter are
 taken to be the same in NaO and RbO as in Na_2O and
 Rb_2O , resp.; this equality being proved in the case of KO
 and KNa . These estms. give the following values of $-\Delta H^\circ$
 and of ΔF_{298}° for the above rate-detg. reaction: $\text{M} = \text{Li}$,
 -12 and $+11$; Na , 10 and -11 ; K , 27 and -28 ; Rb ,
 28 and -29 ; Cs , 31 and -32 . In the overall reaction 3
 $\text{MOH} + 2\text{O} = 2\text{MO} + \text{MOH} \cdot \text{H}_2\text{O} + 3.5\text{O}_2$, for $\text{M} =$
 Li , 24 and -48 ; Na , 97 and -92 ; K , 136 and -131 ;
 Rb , 138 and -133 ; Cs , 140 and -141 kcal. N. Thon

24 (3)
 AUTHORS: Piskunov, A. K., Manenkov, A. A., SOV/56-37-1-49/64
Bagdasar'yan, Z. A.
 TITLE: Paramagnetic Resonance in Potassium Ozonide (Paramagnitnyy rezonans v ozonide kaliya)
 PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 1, pp 302 - 304 (USSR)
 ABSTRACT: Kazarnovskiy, Nikol'skiy and Abletsova (Ref 1) assumed that the magnetism of KO_3 is caused by the O_3^- -ion and that the latter has the character of a free radical with unsaturated valence. The authors of the present "Letter to the Editor" investigated these conditions by employing the method of paramagnetic electron resonance. Polycrystalline samples containing $\sim 90\%$ KO_3 were investigated at the frequencies of 2580, 9375, 12,000 and 37,000 megacycles, at room temperature, as well as at the temperature of liquid nitrogen. In the case of the first 3 experimental frequencies, an absorption line of symmetrical shape was in each case obtained, which had half-widths of 31 ± 3 , 39 ± 2 , and 45 ± 3 G respectively; at 37,000 megacycles, however, an asymmetric line (see figure) with a width of ~ 77 G (at room temperature) was

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found. The asymmetry indicates an anisotropy of the g -factor. For parallel and perpendicular orientation respectively of the crystal with respect to the direction of the external magnetic field, $g_{\parallel} = 2.005 \pm 0.003$ and $g_{\perp} = 2.012 \pm 0.002$ was found respectively. In the following, the contributions made by spin-lattice-, magnetic dipole-, and spin-spin exchange interaction is discussed. By means of the same method other authors (Ref 4) investigated also NaO_3 ; at $\lambda = 1.25$ cm they found a weak asymmetry of the line, and the value of the g -factor determined by them agrees within the error limits with that found here for KO_3 , which confirms the assumption that in ozonides the binding of the metal with the O_3 group has ion character. The authors also investigated the spontaneous decay of KO_3 at a temperature of 295°K by means of diphenylpicrylhydrazyl as a standard. It was found that the KO_3 -decay developed approximately according to an exponential law (time constant $0.02/\text{hour}$). The authors finally thank D. N. Shigorin and S. D. Kaytmazov for their help in carrying out the experiments and for discussing the results. There

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are 1 figure and 4 references, 3 of which are Soviet.

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